

Chapter 2.9 Cedar/Beaver Watershed Management Unit Assessment

2.9.1. Introduction

The Cedar / Beaver Watershed Management Unit includes all streams located in the U.S.G.S Hydrological Units (HUCs) listed in Table 2.9-1. There are not many streams within this unit with the major streams being the Beaver River, Coal Creek, Shoal Creek and Pinto Creek.

Table 2.9-1 U.S.G.S. Hydrological Units in the Cedar/Beaver Watershed Management Unit

Hydrological Unit Code	Hydrological Unit Name
16030006	Escalante Desert
16030007	Beaver Bottoms-Upper Beaver
16030008	Lower Beaver

2.9.2. Water Quality Assessment Results

2.9.2.1. Overall Beneficial Use Support

Data collected between January 1, 2002 and December 31, 2006, including the intensive survey were used to determine beneficial use support. Benthic macroinvertebrate data were used for the first time in making beneficial use assessments (Chapter 2.15).

Beneficial use support assessments are made by comparing data against numeric standards established for each beneficial use. Figure 2.9-2 is a map of the designated beneficial uses assigned to the stream and river Assessment Units. Assessments using benthic macroinvertebrate data are based upon the State's narrative standard.

Of the stream segments assessed, 195.9 (69.5%) are fully supporting, and all the beneficial uses assessed and (30.4%) are not supporting at least one designated beneficial use. The overall beneficial use assessment is shown in Figure 2.9-1.

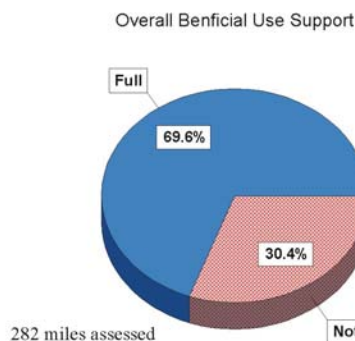


Figure 2.9-1 Overall beneficial use support

2.9.2.2. Beneficial Use Assessment by Categories

The number of stream miles assessed by categories is listed in Table 2.9-2. Figure 2.9-3 is a map of the assessment categories that rivers and streams were assigned to after the beneficial uses were evaluated. An Assessment Unit (AU) can be in more than one category.

Table 2.9-2 Stream Miles by Assessment Category – Cedar/Beaver

Category	Category Definition	Stream Miles
1	All beneficial uses fully supported.	
2	Beneficial uses assessed are fully supported.	195.91
3A	No data or insufficient data to make an assessment.	35.12
3B	Lakes that are not supported for one cycle only.	
3C	Insufficient data to assess but an assessment plan is in place.	
4A	Approved TMDL	57.57
4B	Other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future.	
4C	Impaired by pollution, no TMDL required.	57.57
5	Impaired by pollutant, TMDL required.	

2.9.2.3. Individual Beneficial Use Support

Individual beneficial use support is listed in Table 2.9-3. For aquatic life use support, 195.1 miles (77.4%) are fully supporting and 57.6 miles (22.6%) are not supporting this beneficial use. Of the stream miles assessed for agricultural use, 182.4 (77.4%) were assessed as fully supporting and 57.6 miles as (22.6 %) not supporting this designated beneficial use. The 57.6 miles assessed for swimming and secondary contact are not supporting this beneficial use because of pH.

Table 2.9-3 Individual Beneficial Use Support – Cedar/Beaver Watershed Management Unit (Stream Miles) Classification - 2008

	Size	Size Fully	Size Not	
	Assessed	Supporting	Supporting	Totals
Use				
Drinking Water	0	0	0	0
Fish Consumption	0	0	57.57	57.57
Swimming	57.57	0	57.57	57.57
Secondary Contact	57.57	0	57.57	57.57
Aquatic Life	253.48	195.91	57.57	253.48
Agricultural	239.98	182.41	57.57	239.98
Use				
Drinking Water				
Fish Consumption		0	100.0%	100.0%
Swimming		0	100.0%	100.0%
Secondary Contact		0	100.0%	100.0%
Aquatic Life		77.4%	22.6%	100.0%
Agricultural		94.3%	5.7%	100.0%

Cedar / Beaver Unit

Beneficial Use Classes

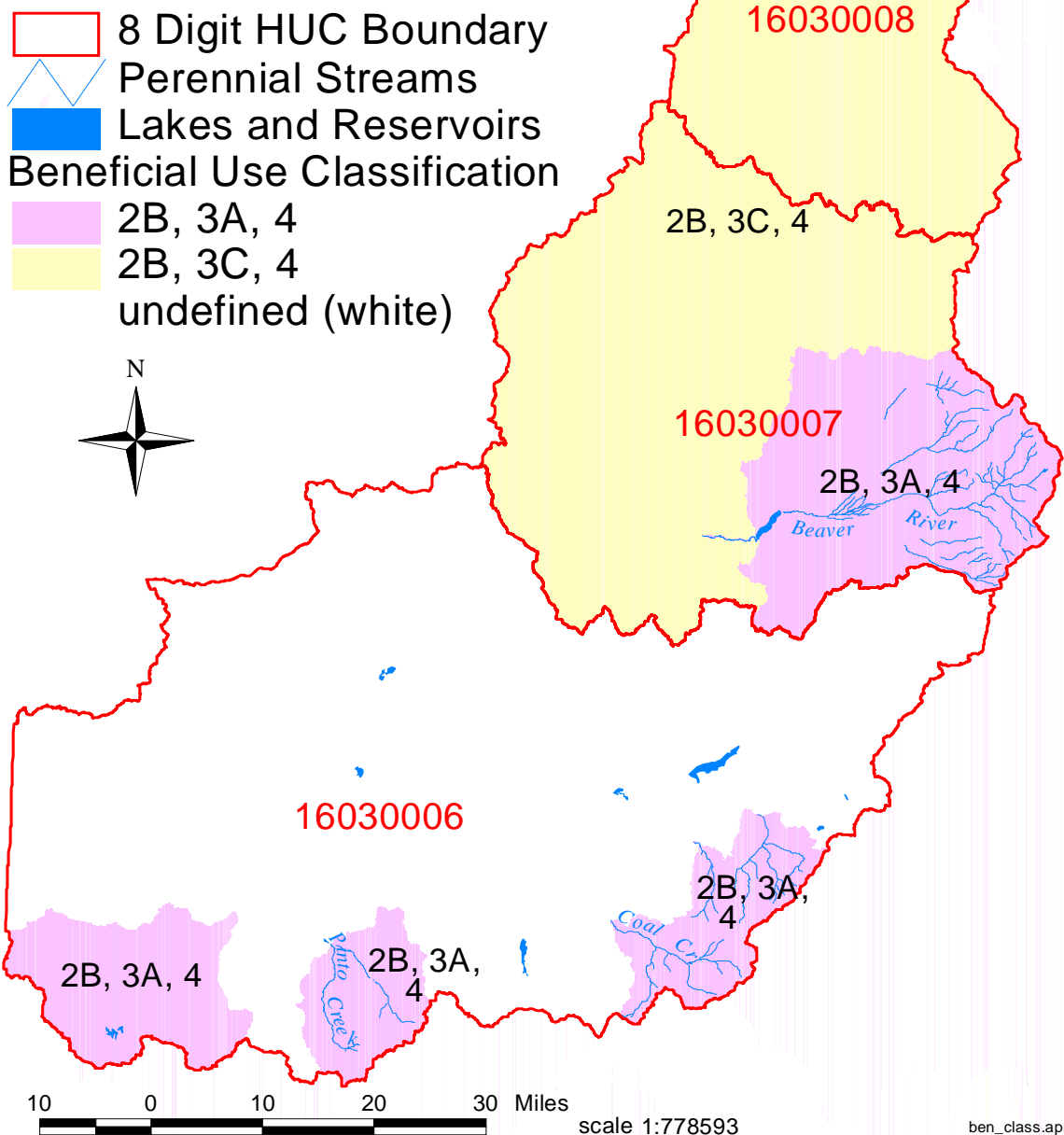


Figure 2.9-2 River and stream designated beneficial use classes – Cedar/Beaver Watershed Management Unit

Cedar / Beaver Management Unit

Assessment Categories 2008

STORET Sites

● 494(XXX)

★ 495(XXX)

■ Lakes and Reservoirs

□ 8-digit HUC Boundary

2008 Assessment

■ 2: Assessed Classes Supporting

■ 3A: Not Assessed (Need More Data)

■ 4A, 4C: TMDLs Approved, Some Not Required

*4C: A pollution parameter listed as category 4C does not require a TMDL analysis.

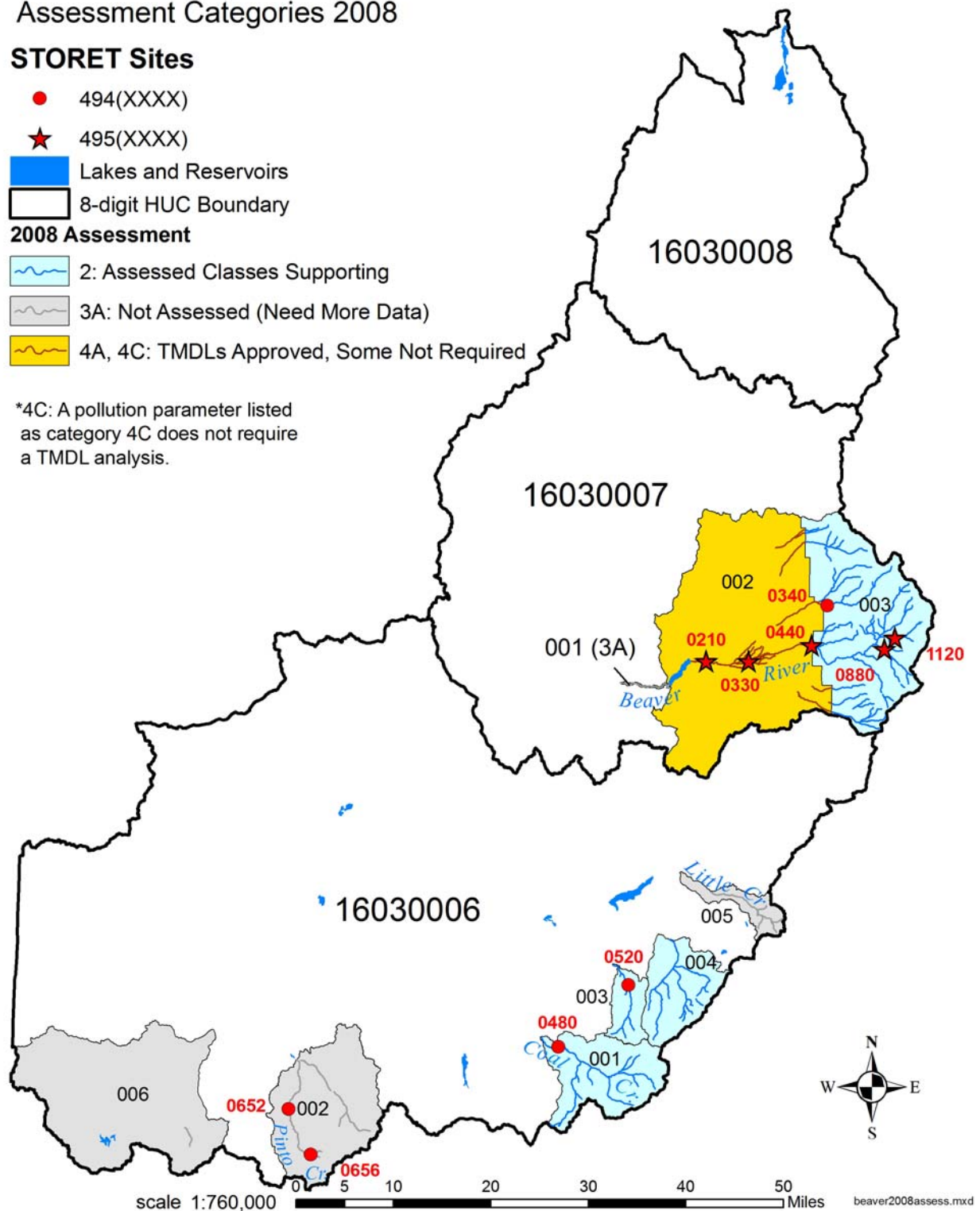


Figure 2.9-3 Beneficial use assessment by category – Cedar / Beaver Watershed Management Unit

2.9.2.4. Total Waters Impaired by Various Causes

The causes of impairment are listed in Table 2.9-4. The causes of impairment are nutrients (total phosphorus), thermal modification, pH and habitat alterations. The percent of miles impacted by various causes is illustrated in Figure 2.9-4. The relative impact of these causes is shown in Figure 2.9-5.

2.9.2.5. Total Waters Impaired by Various Sources

The number of stream miles impacted by sources are listed in Table 2.9-5. The sources of impairment are agricultural activities, hydromodification, habitat modification, and unknown sources as shown in Figure 2.9-6. The relative percent impairment by sources is illustrated in Figure 2.9-7.

2.9.2.6 Impaired Assessment Units

There are no AUs in the Cedar/Beaver Watershed Management Unit listed as impaired for the 2008 Integrated Report Cycle.

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Table 2.9-4 Total Waters Impaired by Various Cause Categories - Cedar/Beaver Watershed Management Unit

Cause Category	Stream Miles
Benthic macroinvertebrate assessment	
E. coli	
Flow Alteration	
Netals	
Organic Enrichment/Low DO	
Other Habitat Alterations	57.57
pH	57.57
Radiation	
Salinity/TDS/Chlorides	
Siltation	
Temperature	57.57
Total Phosphorus	57.57
Unionized Ammonia	

Table 2.9-5 Total Waters Impaired by Various Source Categories – Cedar/Beaver Watershed Management Unit

Source Category	Stream Miles
Agriculture	57.57
Aquaculture	
Construction	
Drought	
Habitat Modification (other than Hydromodification)	57.57
Hydromodification	57.57
Industrial Point Sources	
Land Development	
Major Municipal Point Source	
Municipal Point Sources	
Natural Sources	
Resource Extraction	
Septic	
Source Unknown	57.57
Sources outside State Jurisdiction or Borders	
Urban Runoff/Storm Sewers	

Percent of Stream Miles Affected By Causes

2008 Integrated Report Assessment - Cedar / Beaver Management Unit

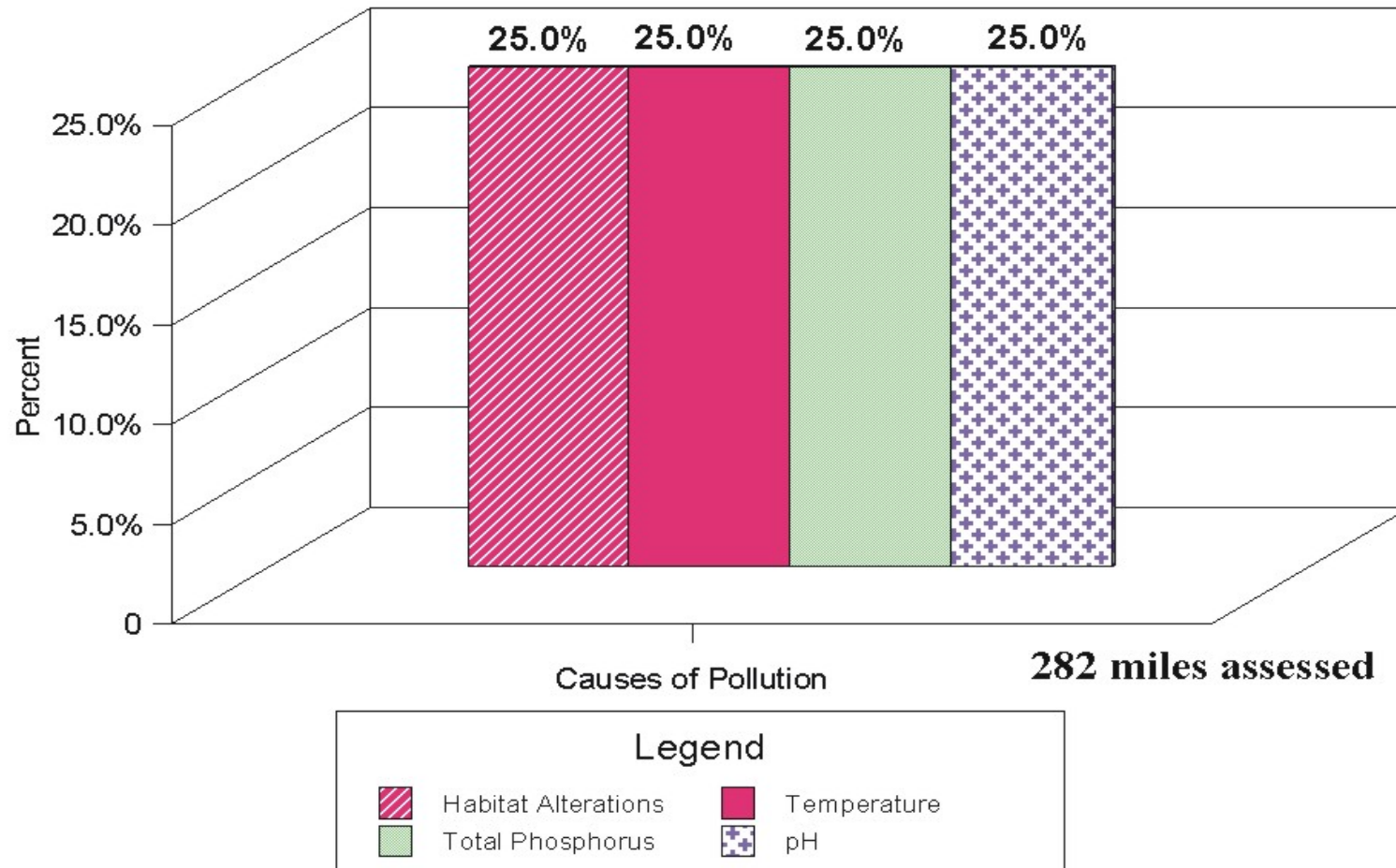


Figure 2.9-4 Percent of assessed stream miles impacted by various causes – Cedar/Beaver Watershed Management Unit

Causes of Stream Water Quality Impairments

2008 Integrated Report Assessment - Cedar / Beaver Mangement Unit

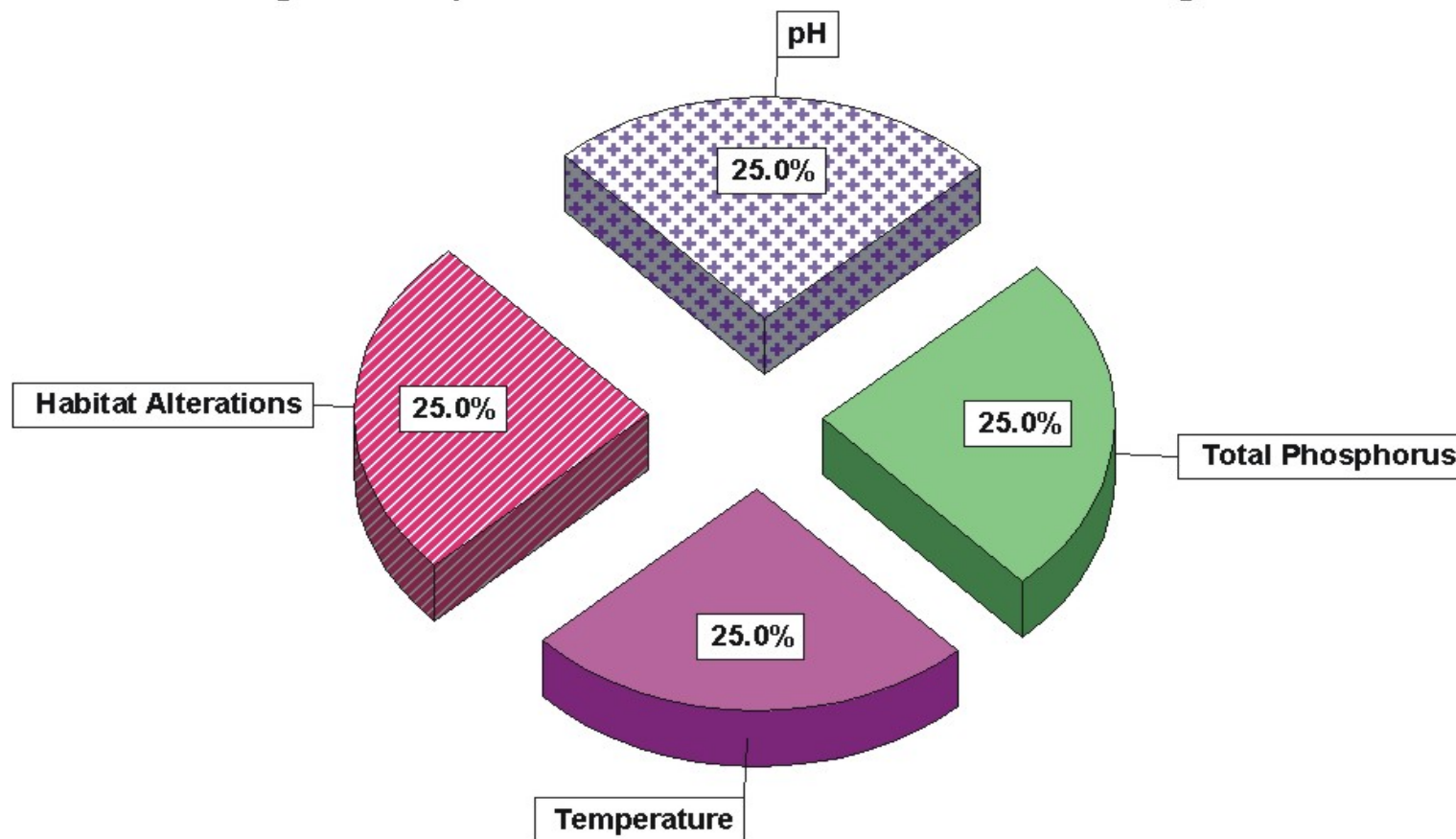


Figure 2.9-5 Relative percent impact by causes on water quality – Cedar/Beaver Watershed Management Unit

Percent of Stream Miles Affected By Sources

2008 Integrated Report Assessement - Cedar / Beaver Watershed Management Unit

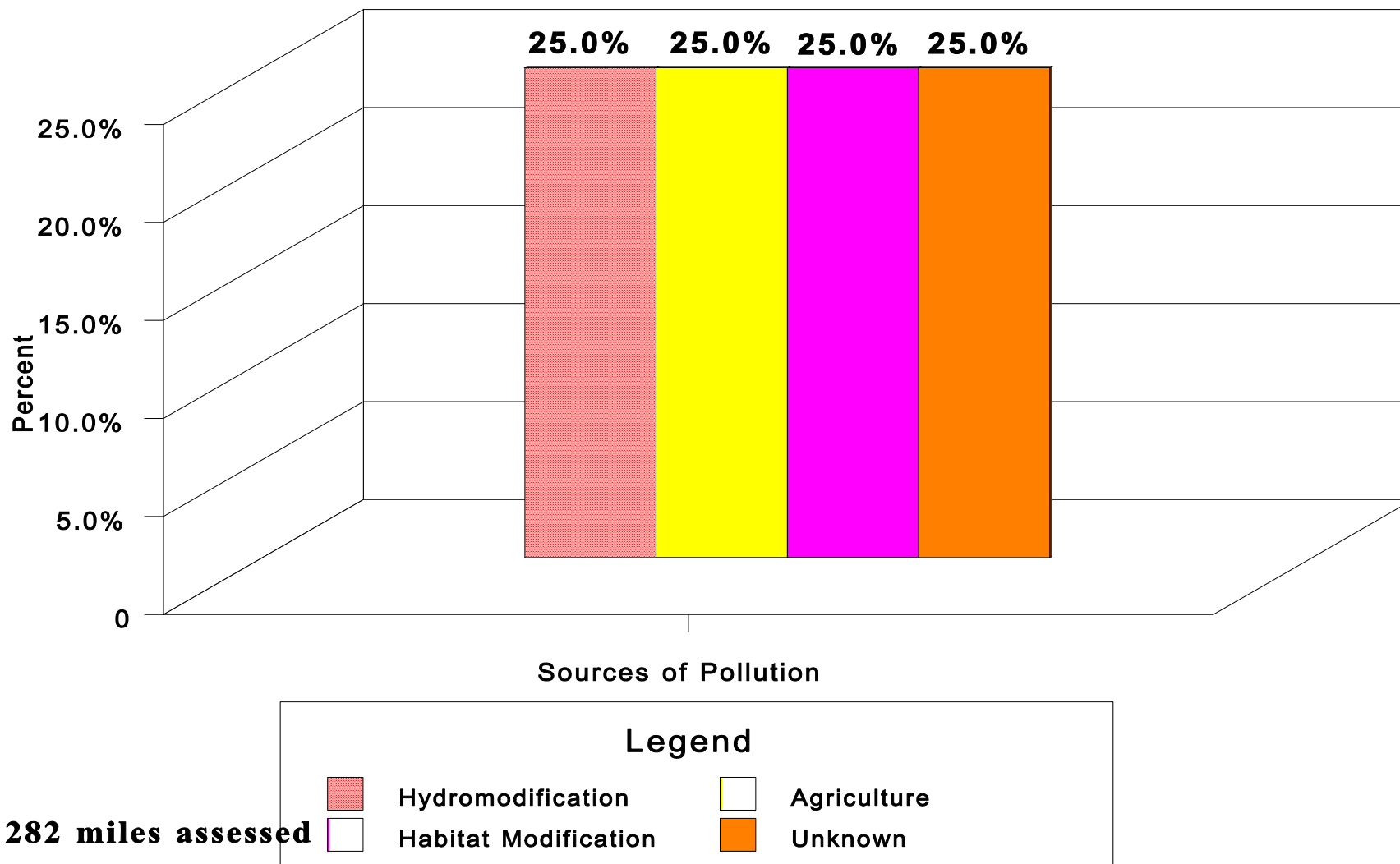


Figure 2.9-6 Percent of assessed stream miles impacted by various sources – Cedar/Beaver Watershed Management Unit

Percent of Stream Miles Affected By Sources

2008 Integrated Report Assessment - Cedar / Beaver Watershed Management Unit

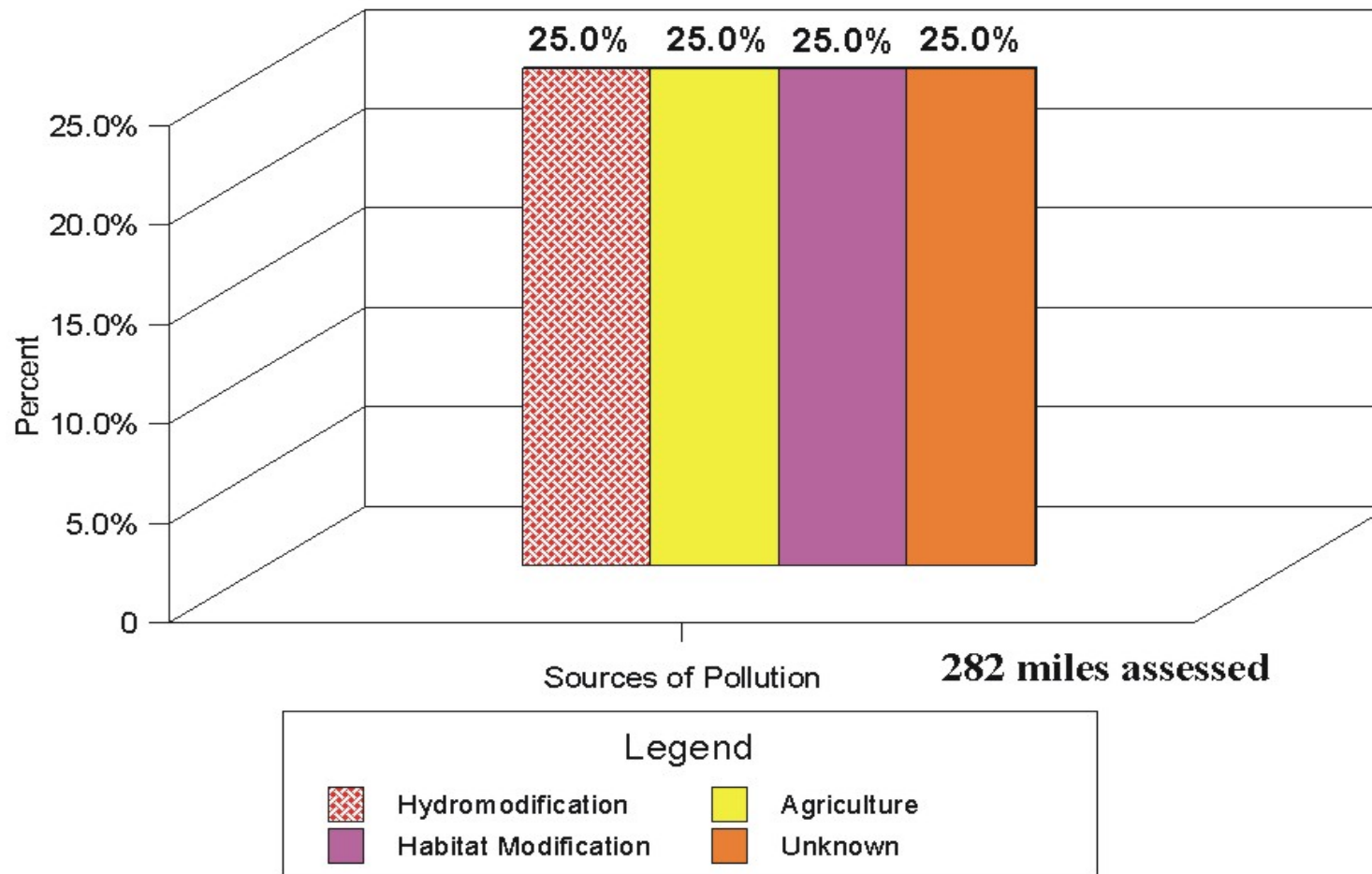


Figure 2.9-7 Relative percent contribution of causes on stream water quality – Cedar/Beaver Watershed Management Unit